Merge the Tools!

by anuj_95

Problem | Submissions | Leaderboard | Discussions | Editorial

Consider the following:

- A string, s, of length n where $s = c_0c_1 \ldots c_{n-1}$.
- An integer, k, where k is a factor of n.

We can split s into $\frac{n}{k}$ subsegments where each subsegment, t_i, consists of a contiguous block of k characters in s. Then, use each t_i to create string u_i such that:

- The characters in u_i are a subsequence of the characters in t_i.
- Any repeat occurrence of a character is removed from the string such that each character in u_i occurs exactly once. In other words, if the character at some index j in t_i occurs at a previous index $< j$ in t_i, then do not include the character in string u_i.

Given s and k, print $\frac{n}{k}$ lines where each line i denotes string u_i.

Input Format

The first line contains a single string denoting s.
The second line contains an integer, k, denoting the length of each subsegment.

Constraints

- $1 \leq n \leq 10^4$, where n is the length of s
- $1 \leq k \leq n$
- It is guaranteed that n is a multiple of k.

Output Format

Print $\frac{n}{k}$ lines where each line i contains string u_i.

Sample Input

```
AABCAAADA
3
```

Sample Output

```
AB
CA
AD
```

Explanation

String s is split into $\frac{n}{k} = \frac{9}{3} = 3$ equal parts of length $k = 3$. We convert each t_i to u_i by removing any subsequent occurrences non-distinct characters in t_i:

1. $t_0 =$ `"AAB"` $\rightarrow u_0 =$ `"AB"`
2. $t_1 =$ `"CAA"` $\rightarrow u_1 =$ `"CA"`
3. $t_2 =$ `"ADA"` $\rightarrow u_2 =$ `"AD"`

We then print each u_i on a new line.